SC/QC/YRI/2019-20/W8-TN-C1 **Date: 02-01-2020**

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53,
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	**155 min**	Shall not be less than 30 min
2	Final setting time	**260min**	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	**2.16%**	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	**2.09mm**	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	**28.74 N/Sq mm**	Shall not be less than 27 N/Sqmm

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SC/QC/VRI/2019-20/W8-TN-PCC1 Date: 02-01-2020

1. TESTING OF COARSE AND FINE AGGREGATES:

Sub: Testing of Coarse and Fine aggregates to be used for bed concrete.

{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}

Ref.: Material testing PMC/19-20,

Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.

Name of the Agency Contractor*: M/s KRIDL , Bangalore.

1. COARSE AGGRGATES TABLE - SIEVE ANALYSIS:

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2007) % Passing	
	40 mm Sample	Single size	Graded
40mm	100.00	85-100	90 – 100
20mm	64.15	0 -20	30- 70
10mm	32.45	0 -5	10- 35
4.75mm	3.25	------	0- 5

2. FINE AGGREGATES TABLE - SIEVE ANALYSIS

IS Sieve Size, mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	96.25	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	81.60	60-95	75-100	85-100	
01.18	74.15	30-70	55-90	75-100	
600.mic	46.10	15-34	35-59	60-79	
300.mic	23.45	5-20	8-30	12-40	
150.mic	7.80	0-10	0-10	0-10	

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SC/QC/YRI/2019-20/W8-TN-C3 Date: 03-01-2020

1. TEST REPORT ON CEMENT:

Sub: Testing of 53 Grade Cement Sample (IS 12269-1987).
(Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)
Ref.: Material testing/PMC/19-20.
Report Required for: Assistant Executive Engineer.
RI.Yelahanka Division.
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

PHYSICAL TESTS ON CEMENT

Grade * : 53.
Type * : O.P.C

TABLE 1.1:

SL No	Name of Test	Test Results	Requirements as per IS 8112-1989
1	Initial setting time	152min	Shall not be less than 30 min
2	Final setting time	275min	Shall not be more than 600 min
3	Fineness (by dry sieving on IS 90 micron sieve)	2.05 %	Not to exceed 10.0%
4	Soundness test(by Le-Chatelier's method)	2.18 mm	Shall not be more than 10 mm
5	Compressive strength a) 3 days (average of three results)	28.46 N/Sq mm	Shall not be less than 27 N/Sqmm

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SC/QC/YRI/2019-20/W8-TN-FA1 Date: 03-01-2020

1. **TESTING OF FINE AGGREGATES :**

Sub: Testing of Fine Aggregates.

(Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)

Ref.: Material testing PMC/19-20.

Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE - 1.1 : SIEVE ANALYSIS :

IS Sieve Size,mm	Percentage Passing	Specification as Per IS: 383-1970(Reaffirmed 2002) Percentage Passing			Remarks
		Zone-I	Zone-II	Zone -III	
04.75	**98.10**	90-100	90-100	90-100	The Sample Conforms to Grading **Zone-II**
02.36	**83.30**	60-95	75-100	85-100	
01.18	**75.15**	30-70	55-90	75-100	
600. mic	**45.65**	15.34	35-59	60-79	
300.mic	**22.40**	5-20	8-30	12-40	
150.mic	**6.30**	0-10	0-10	0-10	

TABLE 1.2 :

Sl No	Test Conducted	Sample	Results	Requirements as Per IS. Specification IS :383-1970 (Reaffirmed 2002)
1	Bulking of Sand	001	**17.62 %**	------
2	Silt Content	----	**0.59%**	Not more than 8%
3	Specific Gravity	----	**2.61**	--------

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SC/QC/YRI/2019-20/W8-TN-CA1

Date: 03-01-2020

1. TESTING OF COARSE AGGREGATES (20 mm):

Sub: Testing of Construction Materials.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Table - 1.1 : SIEVE ANALYSIS :

IS Sieve Size, mm	Percentage passing	Requirements as per IS 383-1970 (Reaffirmed on 2002) % Passing	
	20 mm Sample	Single size	Graded
40 mm	100.00	100.00	100.00
20 mm	98.45	85-100	90 - 100
10 mm	44.90	0 - 20	25 - 55
4.75 mm	3.65	0 - 5	0 - 10

TABLE 1.2 :

SL No	Test conducted	Results	Requirements as per IS:383-1970 & Tests Conforms to IS 2386(Part I to IV) – 1963 (Reaffirmed on 2002)
1.	Flakiness Index	26.72%	Not to exceed 25 %
2.	Crushing value	28.86%	Not to exceed 45 % for concrete other than for wearing surfaces and 30% for concrete for wearing surfaces

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SC/QC/YRI/2019-20/W8-TN-SSM1 Date: 04-01-2020

1.TESTING OF STONE SAMPLE :

Sub: Testing of Size stone.

{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Technical Reference: IS 1121(Part 1) -1974 (R.A on 1998)

Table 1.1 :

SL No	Details of Tests	Observed Value	Normal Values
01	Compressive Strength	**1380.00** Kg/ Sqcm	Not less than 1000.00 Kg/Sqcm
02	Water absorption,%	**0.41 %**	Not more than 2.0 %

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SC/QC/YRI/2019-20/W8-TN-CB1 Date: 21-01-2020

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 07days Compressive Strength).
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm
Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	14-01-20	21-01-20	07	22500	370	16.44	**16.67**
	002	"	"	"	"	380	16.89	
	003	"	"	"	"	375	16.67	

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SC/QC/YRI/2019-20/W8-TN-CB1A

Date: 11-02-2020

1. TEST REPORT ON CEMENT CONCRETE CUBES:

Sub: Testing of Concrete Cubes (for 28days Compressive Strength).
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20.
Report Required for: Assistant Executive Engineer,
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BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

RESULTS OF COMPRESSIVE STRENGTH ON CEMENT CONCRETE

CUBE SPECIMENS

Dimensions of Specimen : 150 X 150 X 150mm

Grade of Concrete* : M_{20}

TABLE 1.1:

Sl No	Location/ Identification*	Date of Casting*	Date of Testing	Age in Days	C/S Area in mm^2	Maximum Load in K.N	Compressive Strength (N/mm^2)	Avg. Value
1	001	14-01-20	11-02-20	28	22500	510	22.67	**22.37**
	002	"	"	"	"	495	22.00	
	003	"	"	"	"	505	22.44	

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SC/QC/VRI/2019-20/W8-TN-G1

Date: 11-01-2020

TEST REPORT ON GRANULAR SUBBASE MIX
(GRADATION TEST)

Sub: To conduct tests on GSB (Grade-V) mix.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. **Gradation Test:**

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
75.00	**100.00**	100
53.00	**98.20**	80-100
26.50	**73.65**	55-90
9.50	**55.10**	35-65
4.75	**48.55**	25-50
2.36	**17.25**	10-20
0.85	**7.40**	2-10
0.425	**3.05**	0-5

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TABLE 1.2

Date: 11-01-2020

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Water absorption, %	0.41 %	Not more than 2.0 %
2.	Liquid Limit, %	18.58	Not more than 25.0 %
3.	Plasticity Index, %	NP	Not more than 6.0 %
4.	Moisture Content, %	6.32	----------
5.	Aggregate Impact Value, %	27.86	Not more than 40.00 %

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SC/QC/YRI/2019-20/W8-TN-W1 Date: 16-01-2020

TEST REPORT ON WET MIX MACADAM MIX
(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	**100.00**	100
45.00	**97.25**	95-100
26.50	---	-
22.40	**71.45**	60-80
11.20	**54.60**	40-60
4.75	**36.15**	25-40
2.36	**23.65**	15-30
0.600	**18.30**	8-22
0.075	**2.70**	0-5

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Date: 16-01-2020

TABLE 1.2

Sl. No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	27.65%	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	28.42 %	Not more than 35.0 %
3.	Water absorption, %	0.41 %	Not more than 2.0 %
4.	Plasticity Index, %	NP	Not more than 6.0 %

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SC/QC/YRI/2019-20/W8-TN-W2 Date: 18-01-2020

TEST REPORT ON WET MIX MACADAM MIX

(GRADATION TEST)

Sub: To conduct Gradation test on Wet Mix Macadam (WMM) Mix.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

1. Gradation Test:

TABLE 1.1

Sieve Size mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Specified Limits as per MoRTH Specifications, V Revision-2013
53.00	100.00	100
45.00	97.40	95-100
26.50	---	-
22.40	73.10	60-80
11.20	57.25	40-60
4.75	34.70	25-40
2.36	21.30	15-30
0.600	19.05	8-22
0.075	3.20	0-5

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Date: 18-01-2020

TABLE 1.2

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	27.51%	Not more than 30.00 %
2.	Combined Flakiness and Elongation index, %	28.78%	Not more than 35.0 %
3.	Water absorption, %	0.42 %	Not more than 2.0 %
4.	Plasticity Index, %	NP	Not more than 6.0 %

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SC/QC/YRI/2019-20/W8-TN-BD1

Date: 21-02-2020

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.
(Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.
Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1 :

SL No	Details	Test Results	Requirements as per I.S 73 –1992 Specifications
1.	Penetration at 25^0 C	**52.80^0 C**	Min. 45
2.	Ductility Value at 25^0 C	**108.60 cm**	40
3.	Flash point	**248^0 C**	Minimum 220^0 C
4.	Softening point	**51.40^0 C**	Min. 47

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SC/QC/YRI/2019-20/W8-TN-CD1 **Date: 21-02-2020**

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Dense Graded Bituminous Macadam.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE 1.1 ;

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
	Aggregate Impact Value	**23.19%**	Not more than 27.00 % for DBM
	Combined Flakiness and Elongation index, %	**26.71%**	Not more than 35.0 %
	Water absorption, %	**0.42%**	Not more than 2.0 %
	Specific gravity	**2.62**	-------
	Soundness	**6.89 %**	Max. 12 % in Sodium Sulphate

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QC/YRI/2019-20/W8-TN-DBM1

Date: 26-02-2020

EST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

b: To determine the percentage of bitumen and gradation for DBM mix sample.
oject*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
.: Material testing/PMC/19-20,
port Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
me of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**96.15**	90-100
19.0	**83.40**	71-95
13.20	**71.80**	56-80
4.75	**46.35**	38-54
2.36	**34.10**	28-42
0.300	**20.05**	7-21
0.075	**6.40**	2-8

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SC/QC/YRI/2019-20/W8-TN-DS1

Date: 27-02-2020

1.TEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1236**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

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SC/QC/YRI/2019-20/W8-TN-DBM2 Date: 27-02-2020

LTEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}

Ref.: Material testing/PMC/19-20,

Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.51%**

2. **Gradation Test**

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	**100**	100
26.5	**98.05**	90-100
19.0	**83.15**	71-95
13.20	**71.50**	56-80
4.75	**49.25**	38-54
2.36	**36.85**	28-42
0.300	**16.40**	7-21
0.075	**7.20**	2-8

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SC/QC/YRI/2019-20/W8-TN-DS2 Date: 28-02-2020

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1256**	900
2	Marshall Flow at 60°C, mm.	**3.42**	2.0 - 4.0

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SC/QC/YRI/2019-20/W8-TN-DBM3 Date: 27-02-2020

TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.54 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	96.15	90-100
19.0	83.55	71-95
13.20	74.10	56-80
4.75	51.65	38-54
2.36	38.05	28-42
0.300	18.90	7-21
0.075	6.45	2-8

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SC/QC/YRI/2019-20/W8-TN-DS3

Date: 28-02-2020

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1248**	900
2	Marshall Flow at 60°C, mm.	**3.12**	2.0 - 4.0

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SC/QC/VRI/2019-20/W8-TN-DBM4 Date: 14-03-2020

LATEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for DBM mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref. Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Dense Graded Bituminous Macadam.**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **4.53 %**

2. Gradation Test
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-10 of MORTH Specfications-2013 DBM (Grading - 2)
37.5	100	100
26.5	95.80	90-100
19.0	82.65	71-95
13.20	73.25	56-80
4.75	48.10	38-54
2.36	34.75	28-42
0.300	18.25	7-21
0.075	7.45	2-8

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SC/QC/RI/2019-20/W8-TN-DS4

Date: 16-03-2020

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for DBM mix sample.
(Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

Table 1: Properties of DBM (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Dense Bituminous Macadam, Grade-2 as per M.o.R.T&H (IV Revision)-2001 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1266**	900
2	Marshall Flow at 60°C, mm.	**3.44**	2.0 - 4.0

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Date: 05-03-2020

1. TEST REPORT ON BITUMEN SAMPLE:

Sub: Testing of Bitumen sample VG-30 Grade.

(Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)

Ref: Material testing/PMC/19-20.

Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
BBMP, Bangalore.

Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

Technical Reference: Ministry of Road Transport and Highways, V Revision, 2013 and IS 73: 1992.

TABLE 1.1:

Sl. No	Details	Test Results	Requirements as per I.S 73-1992 Specifications
1.	Penetration at 25° C	51.20° C	Min. 45
2.	Ductility Value at 25° C	109.0 cm	40
3.	Flash point	237° C	Minimum 220° C
4.	Softening point	50.60° C	Min. 47

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SC/QC/YRI/2019-20/W8-TN-CB1

Date: 05-03-2020

1. TEST REPORT ON COARSE AGGREGATE:

Sub: Testing of Coarse Aggregate used in Bituminous Concrete.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI, Yelahanka Division,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TABLE 1.1 :

SL No	Test conducted	Test Results	Tests Conforms to IS 2386(Part I to IV)– 1963 (Reaffirmed on 2002) & Requirements as per IS:383-1970 & M.o.R.T.H Specification, V Revision -2013.
1.	Aggregate Impact Value	**22.68%**	Not more than 24.00 %
2.	Combined Flakiness and Elongation index, %	**27.54%**	Not more than 35.0 %
3.	Water absorption, %	**0.42%**	Not more than 2.0 %
4.	Specific gravity	**2.62**	-------
5.	Soundness	**5.39%**	Max. 12 % in Sodium Sulphate

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Sl/QC/YRI/2019-20/W8-TN-BC1

Date: 11-03-2020

LATEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
RI,Yelahanka Division,
BBMP, Bangalore.
Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.43 %**

2. Gradation Test

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	**100**	100
13.2	**96.25**	90-100
9.5	**81.45**	70-88
4.75	**73.50**	53-71
2.36	**50.70**	42-58
1.18	**45.30**	34-48
0.600	**33.75**	26-38
0.300	**24.35**	18-28
0.150	**17.25**	12-20
0.075	**8.15**	4-10

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Date: 11-03-2020

TEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.)
Ref: Material testing/PMC/19-20.
Report Required for: Assistant Executive Engineer,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**

1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.42%**

2. Gradation Test

TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	95.85	90-100
9.5	82.15	70-88
4.75	70.55	53-71
2.36	53.25	42-58
1.18	40.80	34-48
0.600	34.45	26-38
0.300	25.60	18-28
0.150	18.25	12-20
0.075	6.90	4-10

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Date: 16-03-2020

LTEST REPORT ON BITUMINOUS MIXES :
(BITUMEN EXTRACTION TEST & GRADATION TEST)

Sub: To determine the percentage of bitumen and gradation for BC mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref.: Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

A. Type of Construction : **Bituminous Concrete**
1. The bitumen content obtained after subjecting the sample for Bitumen Extraction test = **5.44 %**

2. **Gradation Test**
TABLE 1.1

Sieve Size, mm	Percent by Weight passing the Sieve from the sample supplied (Obtained Gradation)	Gradation requirement as per Table 500-17 of MORTH Specfications-2013 BC (Grading - 2)
19.0	100	100
13.2	98.55	90-100
9.5	84.10	70-88
4.75	72.50	53-71
2.36	54.65	42-58
1.18	41.30	34-48
0.600	33.75	26-38
0.300	24.60	18-28
0.150	19.25	12-20
0.075	9.05	4-10

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SC/QC/YRI/2019-20/W8-TN-BS4

Date: 17-03-2020

LTEST REPORT ON BITUMINOUS MIXES :
(STABILITY OF BITUMINOUS MIX)

Sub: To determine the stability of bituminous mix for BC mix sample.
{Project*: Repair and Improvements to roads and drains and footpaths of Tatanagar Main Road in ward no. 08 Kodigehalli.}
Ref. Material testing/PMC/19-20,
Report Required for: Assistant Executive Engineer,
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Name of the Agency/Contractor*: M/s KRIDL, Bangalore.

TEST RESULTS

Table 1: Properties of BC (Gr-2) Mix

Sl. No.	Test Property	*Test results obtained by Marshall method	Requirements of Bituminous Concrete, Grade-2 as per M.o.R.T&H (V Revision)-2013 Specifications
1	Marshall Stability (75 blows) (At 60°C), kgs.	**1356**	900
2	Marshall Flow at 60°C, mm.	**3.32**	2.0 - 4.0

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